

U.S. Appln. No. 09/882,519  
Response and Amendment dated October 10, 2003  
Reply to Office action of August 4, 2003  
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## REMARKS

The office action of August 4, 2003 has been received and carefully reviewed. It is submitted that by this response, all basis, rejection, and objection are traversed. Upon entry of this response, claims 1-25 remain in the application.

Claims 1-4, 6-8, 19, and 21-25 are rejected under 35 USC § 103(a) as being unpatentable over Japanese patent 62-234550. Applicant did not receive a copy of the English abstract of the Japanese patent. A copy was obtained through the European Patent Information Network and is attached. Japanese patent 62-234550 discloses a process for producing a catalyst for the epoxidation of olefins comprising dissolving a quaternary ammonium ion derived from quaternary ammonium compound or quaternary ammonium compound with a nitrogen-containing ring in a solvent such as water, and mixing with a heteropolyacid of an element from Group V of the periodic table dissolved in a solvent such as water. Nowhere in the abstract is there mention of halogenated hydrocarbons, or the use of non-hydrophilic solvents. It would not be obvious from the reference to employ halogenated hydrocarbons as a reaction solvent, as there is no suggestion nor hint to use non-hydrophilic solvents. In addition, the reference describes a process for the production of a catalyst, whereas the present invention is a process for oxidizing a feed component. Therefore, a prima facie case of obviousness has not been made and it is requested that this rejection be withdrawn.

Claims 5, 9-18, and 20 are objected to as based on rejected parent claims. Claims 5, and 9-18 depend from claim 1 and claim 20 depends from claim 19. Arguments have been presented to overcome the rejection of claims 1 and 19. It is therefore requested that this objection be withdrawn.

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In summary, claims 1-25 remain in the application. Applicant asserts that claims 1-25 meet all statutory requirements and respectfully request allowance of all pending claims. If the examiner believes it would expedite prosecution of the above identified application, he is cordially invited to contact applicant's attorney at the below listed telephone number.

Respectfully submitted,



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**CATALYST AND ITS USAGE****CATALYST AND ITS USAGE**

Patent Number: JP62234550

Publication date: 1987-10-14

Inventor(s): ISHII YASUTAKA

Applicant(s): SAN PETORO CHEM:KK

Requested Patent:  JP62234550

Application Number: JP19860228768 19860927

Priority Number(s):

IPC Classification: B01J31/02; C07D301/12

EC Classification:

EC Classification:

Equivalents:

**Abstract**

**PURPOSE:** To obtain the title catalyst for producing epoxides from olefins and hydrogen peroxide with high conversion efficiency and selectivity by using a specified quaternary ammonium ion and the salts of group V elements of the periodic table and tungsten with heteropolyacid ions or their peroxides.

**CONSTITUTION:** A quaternary ammonium compd. shown by the formula R<sub>4</sub>N<+>,X<-> (in the formula, at least one of the Rs are a 8-18C alkyl group, other Rs are a 1-18C alkyl or benzyl group, and X<-> is an anionic counter ion) or a nitrogen ring-contg. quaternary ammonium and the heteropolyacids such as phosphonotungstic acid are respectively dissolved in a solvent such as water, both solns. are then mixed, and the deposited salt is isolated to obtain a catalyst. The catalyst is further treated with hydrogen peroxide before the catalyst is tested for the reaction, and the catalytic activity can be enhanced. High conversion efficiency of olefins and high selectivity can be obtained with use of the catalyst while using easy-to-handle comparatively low-concn. hydrogen peroxide.